

WHAT IS CLAIMED IS:

1. A driving apparatus for a blast furnace charging distribution chute, comprising:

5 a driving unit comprising a crankshaft connected to a motor to rotate with a variable rotational radius;

a power transmission unit comprising a plurality of connection rods connected to the driving unit to linearly transmit power; and

a working unit connected to the power transmission unit and fixed to circumference of a distribution chute to rotate or tilt the distribution chute.

10 2. The driving apparatus according to claim 1, wherein the driving unit further comprises a cylinder, and wherein the cylinder is connected to the crankshaft to vary the rotational radius of the crankshaft.

15 3. The driving apparatus according to claim 2, wherein the driving unit further comprises:

a load-side lever rotatably connected to a driving shaft of the motor;

a first weight having one end connected to the load-side lever and the other end connected to the crankshaft;

20 a no-load side lever rotatably connected to the cylinder; and

a second weight having one end connected to the no-load side lever and the other end connected to the crankshaft, and

wherein the first and second weights balance reciprocation of the crankshaft.

25 4. The driving apparatus according to claim 2, wherein the cylinder is fixed to a no-load side crankshaft, wherein the crankshaft is interposed between a load-side crankshaft connected to the motor and the no-load side crankshaft, and

wherein the load side crankshaft and the no-load side crankshaft are located in the same axis line.

30 5. The driving apparatus according to claim 4, wherein the cylinder is hydraulically driven, and wherein oil for the hydraulic drive is supplied by using a rotary joint and the no-load side crankshaft.

6 The driving apparatus according to claim 2, wherein the crankshaft rotates around a central axis of the motor in parallel with the central axis.

7. The driving apparatus according to claim 2, wherein the cylinder is hydraulically driven.

8. The driving apparatus according to claim 1,
wherein the power transmission unit comprises:

5 a first connection rod for transmitting power, the first connection rod having one end connected to the crankshaft and the other end connected to the working unit; and

a second connection rod for transmitting power, the second connection rod having one end connected to the crankshaft and the other hand connected to the
10 working unit at a predetermined angle with the first connection rod,

and wherein the second connection rod transmits power through link members connected to both ends of the second connection rod.

9. The driving apparatus according to claim 8, wherein the second connection rod is supported by a fixing member connected to the lower portion
15 thereof.

10. The driving apparatus according to claim 8,
wherein the first connection rod and one of the link members are connected with each other through the crankshaft substantially, and
wherein the first connection rod is at right angle with the one of the link
20 members.

11. The driving apparatus according to claim 8,
wherein the working unit comprises:

a first driving lever connected to the first connection rod and fixed to the circumference of the distribution chute; and

25 a second driving lever connected to the link member connected to the second connection rod and fixed to the circumference of the distribution chute, and
wherein the first and the second driving levers are fixed together to a driving body protruded from the circumference of the distribution chute.

12. The driving apparatus according to claim 11, wherein the first
30 driving lever drives an outer driving ring extending from both sides of the driving body around the circumference surface of the distribution chute.

13. The driving apparatus according to claim 12, wherein both ends of the outer driving ring are fixed to bearings arranged in the circumference surface of the distribution chute to allow the outer driving ring to rotate around a center of the

bearing.

14. The driving apparatus according to claim 13, wherein the distribution chute is driven by rotating the outer driving ring.

5 15. The driving apparatus according to claim 11, wherein the second driving lever drives an inner lever horizontally extending from one side of the driving body along the circumference surface of the distribution chute.

10 16. The driving apparatus according to claim 15, wherein an end of the inner lever is adjacent to a guide member arranged on the circumference surface of the distribution chute to allow the inner lever to rotate in support of the guide member.

17. The driving apparatus according to claim 16, wherein the distribution chute is driven by rotating the inner lever.

18. The driving apparatus according to claim 11, wherein the driving body comprises:

15 a first driving body connected to the first driving lever, wherein an opening is provided to the first driving body along the axis thereof; and

a second driving body connected to the second driving lever, wherein the second driving body is inserted into the opening of the first driving body.

20 19. The driving apparatus according to claim 1, wherein the distribution chute is a cylindrical type.